



**Research Title**      **Effect of indole acetic acids (IAA) producing from bacterial endophyte isolated from indigenous upland rice on rice growth**

**Abstract**

The objective of this study was to test the effect of indole-3-acetic acid on seeding and growth in seedling stage of rice. The study had two experiments. Experiment 1, studied the effect of concentration and source of indole-3-acetic acid on seeding, seedling growth, and adventitious root number both in lowland rice (RD31 and RD41) and upland rice (Beu Kor Bi and Nah San) within three weeks. Experiment 2, studied the effect of concentrations of bacteria extracted indole acetic acid (RD4-1-1 IAA) on the seeding of lowland rice (RD31 and RD41) on culturing medium at different salinity levels (0, 4, 6, 8 and 10 dS/m) by used sodium chloride.

Results of Experiment 1 showed significant statistic effect both of concentration and source of IAA on seeding, growth seedling and the adventitious number of rice. Consideration both on lowland and upland rice found 2.5  $\mu$ M RD4-1-1 IAA effect to seeding, growth rate, and root characteristics. The result of Experiment 2, the salinity levels of culture medium showed negative effect on the speed of emergence decreased in two rice varieties. The speed of emergence decreased on RD31 and RD41 when seeds were germinated on medium contained increasing of salinity levels at 8 dS/m and 6 dS/m, respectively. The increasing IAA concentration effected on increasing the speed of emergence in both varieties, when the salt has been increased by increasing sodium chloride concentration in the culture medium. In RD31 at 0-8 dS/m and 10 dS/m of culture medium, the IAA concentration which found the higher speed of emergence were 2.5  $\mu$ M and 50  $\mu$ M RD4-1-1 IAA, respectively. In RD41 at 0-6 dS/m and 8-10 dS/m, the indole acetic acid concentration which found the higher speed of emergence were 2.5  $\mu$ M and 50  $\mu$ M RD4-1-1 IAA, respectively.

**Keywords** : *Oryza sativa*, Seedling growth, Indole-3- acetic acid, Salt condition